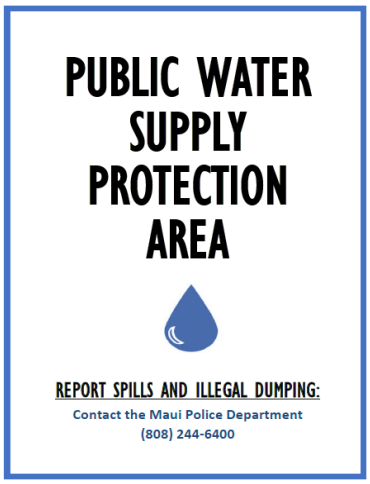
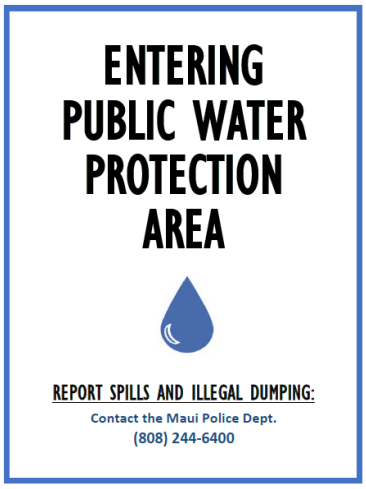
County of Maui Department of Water Supply



What do these signs mean?



Question: What is a Public Water Supply Protection Area?

Answer: A Public Water Supply Protection Area is the area surrounding our public drinking water supply wells—source water. The ground beneath them contains the freshwater aquifers that feed our wells.

Question: How were the Public Water Supply Protection Areas determined?

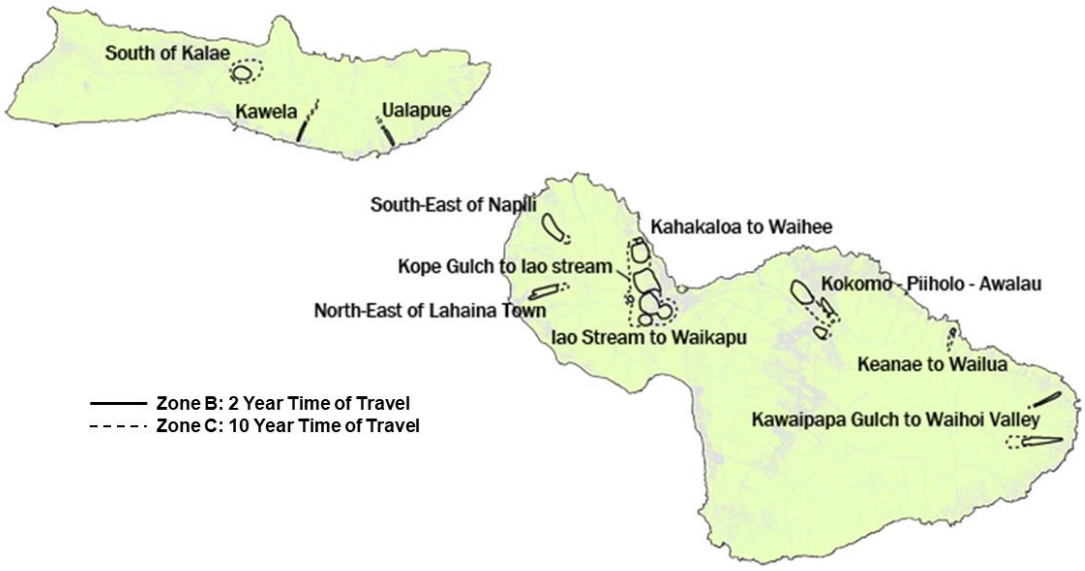
Answer: To protect our drinking water wells from contamination, the areas where certain activities can contaminate the water supply were mapped. The surface and subsurface areas that contribute water to a well were delineated based on their distance from a well, direction of water flow, and times of travel. These "wellhead protection areas" were scientifically determined for all public water supply throughout Hawaii using numerical models applied specifically for this purpose.

Figure 1, below, shows Zone B, 2-year, and Zone C, 10-year, wellhead protection areas (WHPA) that surround public wells. In a 2-year zone, water and any contaminants can reach the well within 2 years' time, and in the 10-year zone within 10 years' time. The EPA also provides an example and information about how a WHPA works here:

https://www.epa.gov/water-research/wellhead-protection-area-whpa-model

DWS Source Water Protection Efforts

Figure 1 Maui County Wellhead Protection Areas



Question: Why is source water protection important?

Answer: Many public water supply wells are located in our community where intentional or unintentional human activities can cause spills, leaks, and dumping of various chemical substances on the ground which penetrates the soil to contaminate the groundwater below. Source water protection is important to ***prevent*** contamination from happening because once a drinking water well is contaminated, it is expensive and often very difficult, to clean. Small amounts of chemical, physical, radiological or biological substances that enter water sources can contaminate millions of gallons of water. Provisioning our supply of water requires DWS to ensure that our water sources are safe and free from contaminants and pollutants. As Maui's most vital resource, safe, clean, water is essential for public consumption, agriculture, commerce, and industry.

Question: What are some contaminants and pollutants endangering water supplies?

Answer: Water supplies can become contaminated by dumping waste and unwanted materials. Dumping garbage, appliances, and vehicles in our environment are common examples. These items are not bio-degradable—slowly leaching harmful substances and chemicals onto the ground. Improper disposal and storing of motor oil, household chemicals, and pesticides will also likely cause a discharge onto the ground. Likewise, the same substances and other chemical byproducts used in agricultural, commercial and industrial applications can cause a contamination. Under the ground, breached septic systems or cesspools also pose a significant risk of contamination to public water supplies. The State of Hawaii Department of Health (DOH), Safe Drinking Water Branch (SDWB), provides more information and a contaminants viewer map of Maui here:

https://eha-cloud.doh.hawaii.gov/sdwb/#!/home

DWS Source Water Protection Efforts

Question: Can the Public Water Supply Protection Area be important beyond its borders?

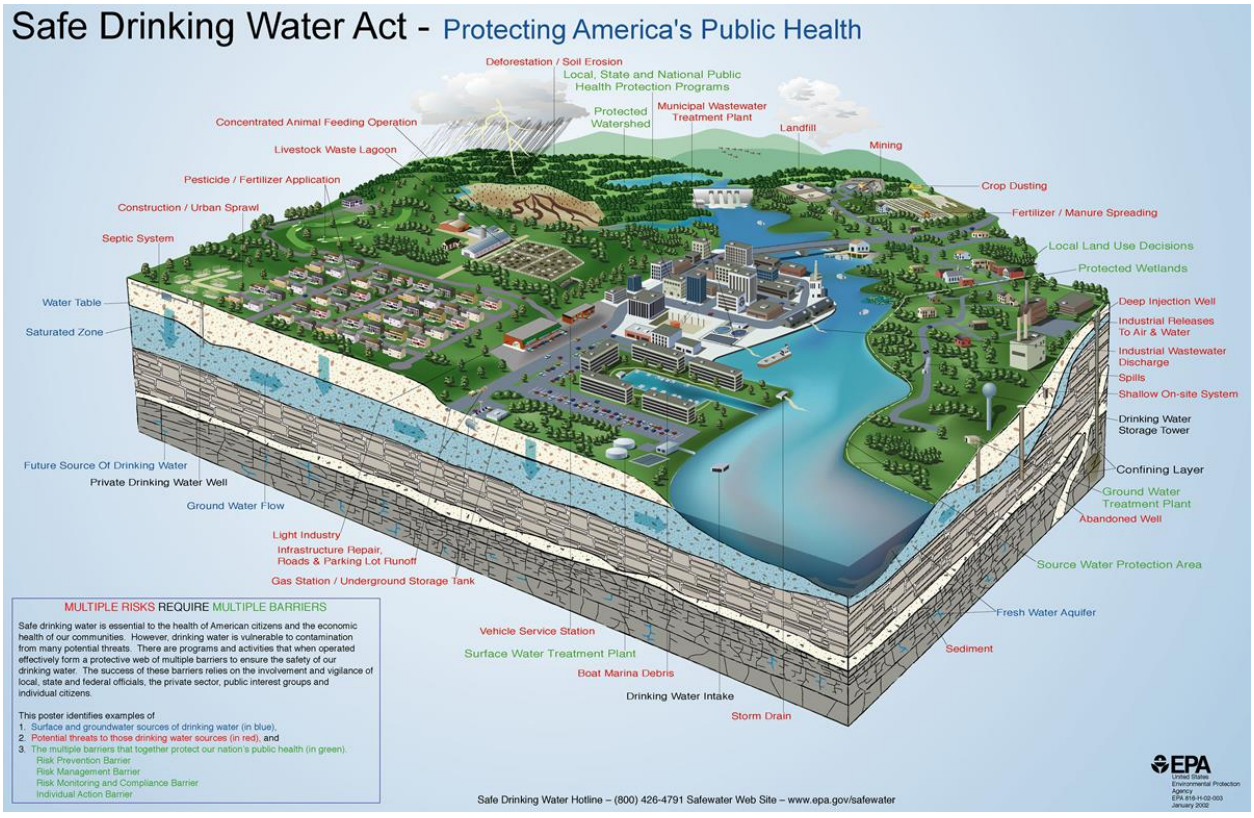
Answer: Absolutely. There are also intake pipes, streams, or other bodies of surface water supply that extend from mauka (mountain side) to makai (ocean side). Contaminants located within the Public Water Supply Protection Area can travel with water run-off to affect other areas. The U.S. Environmental Protection Agency (EPA) provides source water basics on water protection here:

https://www.epa.gov/sourcewaterprotection/source-water-protection-basics

Question: How does contamination of groundwater occur?

Answer: Contaminants and pollutants may enter water supplies by soil infiltration or facilitated by water run-off comingling with surface water bodies such as streams, rivers, and lakes that re-charge groundwater aquifers depicted in Figure 2. Figure 3 also provides a common example of a contamination source area.

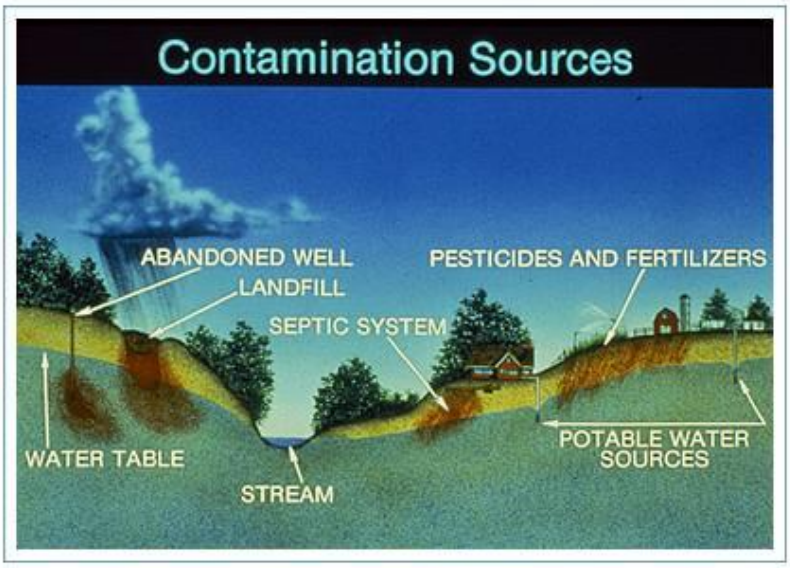
Figure 2 Multiple risks against vital water supplies



Source: United States Environmental Protection Agency (EPA)

DWS Source Water Protection Efforts

Figure 3 Example Contamination Source Area



Source: United States Environmental Protection Agency (EPA)

Question: What can I do to prevent contamination and protect our water supply?

Answer: Please visit our Wellhead Protection Program site here:
https://www.mauicounty.gov/222/Wellhead-Protection

You may also find more information about useful Best Management Practices (BMPs) here:
https://www.mauicounty.gov/777/Best-Management-Practices---Home

Information about the EPA's Safe Drinking Water Act can be found here:
https://www.epa.gov/sdwa

Detailed information about groundwater contamination can be found here:
https://www.epa.gov/sites/production/files/2015-08/documents/mgwc-gwc1.pdf

Detailed information about drinking water contaminants can be found here:
https://www.epa.gov/dwstandardsregulations

The role of The State of Hawaii Department of Health, Safe Drinking Water Branch here:
http://health.hawaii.gov/sdwb/

Information of how the EPA regulates drinking water contaminants here:
https://www.epa.gov/dwregdev/how-epa-regulates-drinking-water-contaminants

Visit and learn more at the EPA's Watershed Academy here:
https://cfpub.epa.gov/watertrain/module.cfm?module_id=41&object_id=767

About the DOH Groundwater Protection Program here:
http://health.hawaii.gov/sdwb/groundwater-protection-program/